

WHAT IS CLAIMED IS:

1 An isolated nucleic acid encoding a G-protein coupled receptor
2 polypeptide, the nucleic acid encoding a polypeptide comprising greater than 70% amino
3 acid identity to an amino acid sequence of SEQ ID NO:8 or SEQ ID NO:10, or SEQ ID
4 NO:12.

1 2. The isolated nucleic acid of claim 1, wherein the nucleic acid
2 encodes a polypeptide having at least 50 contiguous amino acids of an amino acid
3 sequence of SEQ ID NO:8, SEQ ID NO:10, or SEQ ID NO:12.

1 3. The isolated nucleic acid of claim 1, wherein the nucleic acid
2 encodes a polypeptide that specifically binds to polyclonal antibodies generated against
3 an amino acid sequence of SEQ ID NO:8, SEQ ID NO:10, or SEQ ID NO:12.

1 4. The isolated nucleic acid of claim 1, wherein the nucleic acid
2 encodes a polypeptide that has G-protein coupled receptor activity.

1 5. The isolated nucleic acid of claim 1, wherein the nucleic acid
2 encodes a polypeptide comprising an amino acid sequence of SEQ ID NO:8, SEQ ID
3 NO:10, or SEQ ID NO:12.

1 6. The isolated nucleic acid of claim 1, wherein the nucleic acid
2 comprises a nucleotide sequence of SEQ ID NO:7, SEQ ID NO:9, or SEQ ID NO:11.

1 7. The isolated nucleic acid of claim 1, wherein the nucleic acid is
2 amplified by primers that specifically hybridize under stringent hybridization conditions
3 to a nucleic acid having a nucleotide sequence of SEQ ID NO:7, SEQ ID NO:9, or SEQ
4 ID NO:11.

1 8. An isolated nucleic acid encoding a G-protein coupled receptor
2 polypeptide, wherein the nucleic acid specifically hybridizes under stringent hybridization
3 conditions to a nucleic acid having a nucleotide sequence of SEQ ID NO:7, SEQ ID
4 NO:9, or SEQ ID NO:11.

1 9. An isolated nucleic acid encoding a G-protein coupled receptor
2 polypeptide, the polypeptide encoded by the nucleic acid comprising greater than about

3 70% amino acid identity to a polypeptide having an amino acid sequence of SEQ ID
4 NO:8, SEQ ID NO:10, or SEQ ID NO:12, wherein the nucleic acid selectively hybridizes
5 under moderately stringent hybridization conditions to a nucleotide sequence of SEQ ID
6 NO:7, SEQ ID NO:9, or SEQ ID NO:11.

1 10. An isolated G-protein coupled receptor polypeptide, the
2 polypeptide comprising greater than about 70% amino acid sequence identity to an amino
3 acid sequence of SEQ ID NO:8, SEQ ID NO:10, or SEQ ID NO:12.

1 11. The isolated polypeptide of claim 10, wherein the polypeptide
2 specifically binds to polyclonal antibodies generated against SEQ ID NO:8, SEQ ID
3 NO:10, or SEQ ID NO:12.

1 12. The isolated polypeptide of claim 10, wherein the polypeptide has
2 G-protein coupled receptor activity.

1 13. The isolated polypeptide of claim 10, wherein the polypeptide has
2 an amino acid sequence of SEQ ID NO:8, SEQ ID NO:10, or SEQ ID NO:12.

1 14. An antibody that selectively binds to the polypeptide of claim 10.

1 15. An expression vector comprising the nucleic acid of claim 1.

1 16. A host cell transfected with the vector of claim 15.

1 17. An isolated nucleic acid encoding a G-protein coupled receptor
2 polypeptide, the nucleic acid encoding a polypeptide comprising greater than 85% amino
3 acid identity to an amino acid sequence of SEQ ID NO:16 or SEQ ID NO:18.

1 18. The isolated nucleic acid of claim 17, wherein the nucleic acid
2 encodes a polypeptide having at least 50 contiguous amino acids of an amino acid
3 sequence of SEQ ID NO:16 or SEQ ID NO:18.

1 19. The isolated nucleic acid of claim 17, wherein the nucleic acid
2 encodes a polypeptide that specifically binds to polyclonal antibodies generated against
3 an amino acid sequence of SEQ ID NO:16 or SEQ ID NO:18.

- 1 29. The isolated polypeptide of claim 26, wherein the polypeptide has
2 an amino acid sequence of SEQ ID NO:16 or SEQ ID NO:18.
- 1 30. An antibody that selectively binds to the polypeptide of claim 26.
- 1 31. An expression vector comprising the nucleic acid of claim 17.
- 1 32. A host cell transfected with the vector of claim 31.
- 1 33. A method for identifying a compound that modulates signal
2 transduction, the method comprising the steps of:
3 (i) contacting the compound with a polypeptide comprising greater than
4 70% amino acid sequence identity to the amino acid sequence of SEQ ID NO:2, SEQ ID
5 NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:16 and SEQ ID
6 NO:18; and
7 (ii) determining the functional effect of the compound upon the
8 polypeptide.
- 1 34. The method of claim 33, wherein the polypeptide has G-protein
2 coupled receptor activity.
- 1 35. The method of claim 33, wherein the polypeptide comprises greater
2 than 70% amino acid sequence identity to the amino acid sequence of SEQ ID NO:8 or
3 SEQ ID NO:10 or greater than 85% amino acid sequence identity to the amino acid
4 sequence of SEQ ID NO:16 and SEQ ID NO:18.
- 1 36. The method of claim 33, wherein the polypeptide is linked to a
2 solid phase.
- 1 37. The method of claim 33, wherein the functional effect is
2 determined by measuring changes in intracellular cAMP, IP3, or Ca^{2+} .
- 1 38. The method of claim 33, wherein the functional effect is
2 determined by measuring binding of the compound to the polypeptide.

